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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/519,954	12/31/2004	Giorgio Celeste Citterio	163-593	7346

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EXAMINER	
RUDDOCK, ULA CORINNA	
ART UNIT	PAPER NUMBER
1794	

MAIL DATE	DELIVERY MODE
08/04/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/519,954	CITTERIO, GIORGIO CELESTE	
	Examiner	Art Unit	
	Ula C. Ruddock	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 July 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 7-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 7-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on July 21, 2009, has been entered.

2. The Examiner has carefully considered Applicant's amendments and accompanying remarks filed July 21, 2009.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

4. Claims 1 and 7-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuchs et al. (WO 00/08411) in view of Cordova et al. (US 6,276,254) further in view of GB 2349798 issued to Plant or Schuster (this portion as substantially set forth in a previous office action). Fuchs teaches (pg. 1 line 29 - pg. 2 line 2) a stab resistant material made from two flexible woven fabrics. The fabric of the yarn is made of yarn having a tensile strength of 900 MPa and has a polymer film joining the fabrics. The protective material has an outer surface facing the attack and an inner surface facing away. Fuchs does not disclose that the polymer is in the form of a thixotropic fluid.

Cordova discloses (Col. 14 line 8) that the fiber for felt layer 16 can be an aramid fiber. Cordova discloses (Col 11 lines 7-8) that the most preferred nonwoven network is needle punched felt. Fuchs discloses (Pg. 2 lines 20-27) that the yarns have a tensile strength of 900 MPa. Fuchs discloses yarns made of polymers such as, polyester, polyolefin, and polyimide. Cordova also states these materials. Fuchs discloses (Pg. 5 line 18) that the fabrics were produced in a plain weave. Fuchs discloses (Pg. 5 line 20) that the fabrics produced had a fabric density of 30% according to Walz. Fuchs discloses (Pg. 4 line 9) that the material comprises multiple layers of the stab resistant material. This includes a layer of polymer film as stated above. It would be inherent that the polymer film has a layer of fabric on each side. Fuchs discloses (Pg. 1 line 32) that a polymer film is joining the fabrics. Fuchs discloses (Pg. 5 lines 22-24) that the fabrics can be laminated together with a polymer film. Fuchs discloses (Pg. 2 lines 1-2) that the flexural modulus of the polymer film is between 1500-4500 MPa and strength of 10 MPa. Fuchs discloses (Pg. 2 line 30) that the flexural modulus of the polymer film is between 2000-3000 MPa. Fuchs discloses (Pg. 5 lines 21-22) that the polymer film is made of polycarbonate. Cordova discloses (Col 14 lines 6-14) a first layer of felt 16 attached to a woven layer 17 with a second layer of felt 18 attached to it. Fuchs discloses (Pg. 4 line 11) that the stab resistant package has 10-25 layers. Fuchs discloses (Pg. 4 line 11) that the stab resistant package has 10-25 layers. Fuchs discloses (Pg. 4 lines 14-15) that the layers are placed in an envelope made from a textile material. Fuchs or Cordova both fail to disclose the use of a thixotropic fluid as the polymer of choice. Either Plant or Schuster remedies this.

GB 2349798 issued to Plant teaches a protective member primarily used as an energy-absorbing composites. The energy absorbing material remains malleable until it is subjected to an impact when its characteristics change rendering it temporarily rigid, the material returning to its normal malleable condition after said impact. The Examiner is equating this to the same as Applicant's visco-elastic liquid. The energy absorbing material is a strain rate sensitive material such as a dilatant. The material may be applied to a fabric. The composite may also have additional layers of the same material or other materials like foams and spacer fabrics, thus creating a packet. Chemically, they are the same as that of Applicant.

The patent to Schuster et al. is directed to antiballistic protective clothing comprising at least one layer of a flat structure containing an organic dilatancy agent (Abstract). The dilatant agent is saturated or charged into the structure (column 2, lines 31-32). The dilatancy imparting polymers are preferably applied in the form of dispersion to the structures (column 3, lines 5-7).

Therefore, a person having ordinary skill in the art at the time the invention was made would have found it obvious to employ the energy absorbing resin layer of Plant or the dilatant polymer of Schuster as the resin material in Fuchs or Cordova's composite. One would have been motivated to do this, in order to make a ballistic vest that would not require as many fabric/resin layers, thereby making the ballistic vest lighter in weight and more comfortable to wear.

With regard to the polymer molecular weight, a skilled artisan would have found it obvious to have optimized the polymeric molecular weight, as optimizing the molecular weight and the amount of visco-elastic liquid is considered a result effective variable. The polymeric molecular weight would directly affect the strength and functionality of the composite. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have used a polymer having a molecular weight ranging from 250-50000, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Given that the combination of the aforesaid references, they meet each and every chemical and structural requirement set forth in the claims, then it must meet the property limitations of viscosity and liquid temperature which depend from said requirements. In other words, it is reasonable to presume that the invention of those set forth above, would inherently anticipate if not render obvious the physical properties of the present invention, since both inventions are comprised of an the same types of fibers, having the same weaves and denier with the same type of coatings with the same end use.

Furthermore, as no other structural or chemical features are claimed which may distinguish the present invention from that of Fuchs, Cordova, or with either Schuster or Plant, the presently claimed physical properties of viscosity and liquid temperature are deemed to be inherent if not obvious to the inventions of Fuchs, Cordova, with either Schuster or Plant et al. The burden is upon Applicant to prove otherwise. Note *In re Fitzgerald,* 205 USPQ 495.

Without a showing that evidences a difference between the prior art and the present invention, anticipation/OBVIOUSNESS is proper. In addition, the presently claimed properties of viscosity and liquid temperature would have been present once the composite of Fuchs, Cordova, with either Schuster or Plant were provided. Note *In re Best,* 195 USPQ at 433, footnote 4 (CCPA 1977).

Rejection is maintained.

Response to Arguments

5. Applicant's arguments filed July 21, 2009, have been fully considered but they are not persuasive for the reasons set forth. Applicant argues that none of the cited references disclose fibers that are impregnated or wetted with a polymer in the form of a viscous or visco-elastic liquid. This argument is not persuasive because Applicant is attacking the references individually. Applicant cannot show non-obviousness by attacking references where, as here, the rejections are based on a combination of references. *In re Keller*, 208 USQ 871 (CCPA 1981). In the present rejection, the combination of the Fuchs, Cordova, and Plant or Schuster references discloses the claimed invention. It should be noted that in the final product, one having ordinary skill in the art, would not have been able to differentiate or distinguish between a ballistic composite having a polymer film or a viscous or visco-elastic polymer. Therefore, the rejection is maintained.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ula C. Ruddock whose telephone number is 571-272-1481. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/U. C. R./

/Ula C Ruddock/
Primary Examiner, Art Unit 1794